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GAO

Report to Congressional Requesters

November 1990

**AIRLINE  
DEREGULATION**

**Trends in Airfares at  
Airports in Small and  
Medium-Sized  
Communities**



142811



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**Resources, Community, and  
Economic Development Division**

B-240364

November 8, 1990

The Honorable Ernest F. Hollings  
Chairman, Committee on Commerce,  
Science, and Transportation  
United States Senate

The Honorable Richard H. Bryan  
United States Senate

This report addresses your concern that people traveling to and from small and medium-sized communities have been adversely affected by airline deregulation and have been paying higher fares. To respond to your requests, we examined airfares since deregulation (1978) for airports serving small and medium-sized communities and compared fare changes at these airports with those at airports serving the nation's largest communities.<sup>1</sup> We also examined average yields—fares per passenger mile—in 1979, 1984, and 1988 for flights from airports serving the different sizes of communities.<sup>2</sup> Our findings on fares generally corroborate those reported by the Department of Transportation (DOT) in its February 1990 study of the airline industry.<sup>3</sup> DOT found that airfares are lower since deregulation at airports of all sizes and that small cities benefited from the greatest decline in fares.

This review did not assess the reasons underlying differences in fares per passenger mile at individual airports. Other recently issued reports discuss factors that affect fares, such as the presence or absence of competing airlines and barriers to entry at airports.<sup>4</sup>

## Results in Brief

Overall, average fares per passenger mile, adjusted for inflation, were more than 9 percent lower in 1988 than in 1979 at airports serving small and medium-sized communities and about 5 percent lower at airports

<sup>1</sup>We defined small communities as those with a metropolitan statistical area (MSA) population of 300,000 or less, medium-sized communities as those with an MSA population of 300,001 to 600,000, and large communities as those with an MSA population of 1.5 million or more.

<sup>2</sup>We will use the term "average fare" to discuss yield, or fare per passenger mile.

<sup>3</sup>Secretary's Task Force on Competition in the U.S. Domestic Airline Industry, U.S. Department of Transportation (Washington, D.C.: Feb. 1990).

<sup>4</sup>See Airline Competition: Higher Fares and Reduced Competition at Concentrated Airports (GAO/RCED-90-102, July 11, 1990) and Airline Competition: Industry Operating and Marketing Practices Limit Market Entry (GAO/RCED-90-147, Aug. 29, 1990).

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serving large communities.<sup>5</sup> However, the decreases varied widely, falling by as much as 34 percent at the airports in Lubbock and Midland, Texas, and Phoenix, Arizona. Fares declined at 76 of the 112 airports we reviewed, including 38 of the 49 airports serving small communities.

While the overall average fares declined between 1979 and 1988, 29 of the 112 airports experienced increases. For example, fares rose by as much as 27 percent at the Augusta and Atlanta, Georgia, airports. The airports with increases included 15 of the 38 medium-sized-community airports.<sup>6</sup>

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## Background

From 1938 to 1978, the Civil Aeronautics Board (CAB) regulated the airline industry, controlling what fares domestic interstate airlines could charge and what cities they could serve. Legislatively mandated to promote and develop the air transportation system, CAB believed that passengers traveling shorter distances—more typical of travel from small and medium-sized communities—would not choose air travel if they had to pay the full cost of service. Thus, in keeping with its mandate, CAB set fares per passenger mile, relative to costs, lower in short-haul markets and higher in long-haul markets. This “cross-subsidization” benefited passengers in short-distance markets at the expense of travelers in long-distance markets. However, concerned that CAB’s regulatory practices had made the industry inefficient and had caused fares to be too high in many markets, the Congress enacted the Airline Deregulation Act of 1978.

This act phased out CAB’s control of fares and service and placed reliance on competitive market forces to decide the quality, variety, and price of domestic air service. Fares were expected to fall at airports serving large communities, from which many trips are long-distance over heavily traveled routes that can be characterized by more competition. However, without the cross-subsidy present under regulation, fares were expected to increase at airports serving small and medium-sized communities relative to fares at airports serving large communities.

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<sup>5</sup>All yields are in 1988 dollars. Our sample of 112 airports included 49 airports serving small communities, 38 serving medium-sized communities, and 25 serving the nation’s largest communities. Appendixes I and II list the 112 airports by community size.

<sup>6</sup>For seven airports in our sample, we were unable to determine the direction, if any, of the change in yields from 1979 to 1988. (See apps. I and II.)

In conducting our review, we used DOT's "Passenger Origin-Destination Survey" to calculate fares per passenger mile in 1979, 1984, and 1988 for a sample of airports.<sup>7</sup> We used the 1979 fare data as the earliest available since deregulation, the 1984 data as representative of increased competition in the airline industry, and the 1988 data as the most current available at the time of our review. To provide consistent, comparable information, we used the same routes out of each airport for all 3 years. Because the number of passengers traveling on the various routes can change over time, examining fares at two different times could reflect differences in the number of travelers going to various destinations rather than fare changes. Therefore, to take this into account, we held the distribution of passengers between routes constant at the 1988 level for both 1979 and 1984. By using the same routes and distribution of passengers, we isolated changes in fares from changes in traffic composition. We also calculated sampling errors of the yields and changes in yields for each airport; these are contained in appendixes I and II.

## Fares Per Passenger Mile Have Fluctuated

Average fares, after adjusting for inflation, were lower overall in 1988 than in 1979 and 1984 at airports serving all three sizes of communities. However, they were higher in 1984 primarily because of the airlines' higher operating costs, especially fuel costs. Between 1979 and 1988, inflation-adjusted fares fell by over 9 percent at airports serving small and medium-sized communities and by about 5 percent at the airports serving large communities. Even with the larger decline at the small- and medium-sized-community airports, the overall average fares per passenger mile at these airports were higher than the average fare at large-community airports. Information for individual airports is provided in appendix I.

The higher average fares in 1984 for all three community sizes can be attributed primarily to the increase in airline operating costs during the early 1980s, according to DOT's airline industry study. During the 1980-83 period, fuel costs increased substantially and remained high compared with those in 1979. Nonfuel costs rose slightly between 1981 and 1984 from their 1979 level.<sup>8</sup> Fares increased as a result of the higher

<sup>7</sup>DOT's "Passenger Origin-Destination Survey" provides detailed quarterly information on fares paid, passengers' origins and destinations, and other pertinent traffic information. It is based on a nominal 10-percent sample of all tickets purchased for flights on domestic airlines.

<sup>8</sup>During the late 1980s, fuel costs decreased significantly from the high levels of the early 1980s, while nonfuel costs declined only slightly.

costs. After the pressure of fuel costs subsided, fares (adjusted for inflation) resumed their long-term decline. Both our data and DOT's analysis show that by 1988, the average inflation-adjusted fares at airports serving all three sizes of communities were below the 1979 levels.

The shift to hub-and-spoke systems since deregulation has had a major impact on airline fares. These systems bring passengers from multiple origins (the spokes) to a common point (the hub) and place them on new flights to their ultimate destinations. The hub-and-spoke systems provide more frequent flights and more travel options than did the direct "point-to-point" systems that predominated before deregulation. However, not all markets have been affected to the same extent. We found that fares declined more at the small- and medium-sized-community airports, which are more often the spokes, than at the large-community airports, which are more often airline hubs.

In its recent report, DOT found that smaller cities benefited by receiving more frequent service and more service to connecting hubs of several airlines. Thus, instead of having a choice of a few direct flights between smaller communities and a final destination, travelers departing from smaller communities might now have a choice between many flights from several airlines through different hubs. At the same time, there is less competition at some of the large-community airports that have become dominated by one or two airlines. The relative increase in competition at the small- and medium-sized-community airports likely explains the relatively greater decline in average fares at these airports. (See table 1.)

**Table 1: Fares Per Passenger Mile at Airports Serving Different Sizes of Communities**

Community size	Cents per passenger mile <sup>a</sup>			Percentage change		
	1979	1984	1988	1979-84	1984-88	1979-88
Small	18.5	21.9	16.8	+18.3	-23.4	-9.3
Medium	18.5	20.6	16.7	+11.5	-19.0	-9.6
Large	16.3	17.8	15.4	+9.5	-13.3	-5.0

<sup>a</sup>Fares are in constant 1988 dollars.

Despite the larger decline at the airports serving small and medium-sized communities, fares remained lower at the airports serving large communities. It is generally accepted that yields tend to be lower at large-community airports because of economies associated with traffic

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volume (number of passenger miles flown from an airport) and trip distance. As the volume of traffic and average length of haul increase, the average cost per passenger mile decreases, and this allows for lower fares. Airports serving small and medium-sized communities tend to have fewer heavily traveled routes and shorter average trip distances. This results in higher average costs and higher fares per passenger mile compared with those of large-community airports.

We found that the volume of traffic was significantly lower at the airports serving the small and medium-sized communities than at those serving large communities. In 1988, the small- and medium-sized-community airports generated average passenger miles per airport of about 169 million and 327 million, respectively, while the 25 large-community airports generated average passenger miles per airport of over 4.4 billion. In addition, the average trip distances at the small- and medium-sized-community airports were less—834 miles and 817 miles, respectively—compared with an average distance of over 950 miles at the large-community airports.

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## Fares Per Passenger Mile Increased at Some Airports

Although overall average fares per passenger mile for airports serving all three sizes of communities were lower in 1988 than in 1979, they were higher at some airports, especially those serving medium-sized communities. We found that 7 of the 49 small-community airports, 15 of the 38 medium-sized-community airports, and 7 of the 25 large-community airports had higher yields in 1988 than in 1979. The largest increases were at airports in the Southeast, and these same airports generally had higher yields than other airports in our sample. Table 2 lists airports where the fares per passenger mile increased by more than 10 percent from 1979 to 1988. Appendix I provides this information for all of the airports in our sample.

**Table 2: Airports Where Fares Per Passenger Mile Increased Over 10 Percent From 1979 to 1988**

Community size and airport	Location	Cents per passenger mile <sup>a</sup>		Percentage increase
		1979	1988	
<b>Small</b>				
Huntsville-Madison County	Huntsville/Decatur, Ala.	19.9	23.8	19.3
Dannelly Field	Montgomery, Ala.	19.3	24.3	25.9
<b>Medium</b>				
Bush Field	Augusta, Ga.	18.9	24.1	27.3
Columbia Metropolitan	Columbia, S.C.	19.0	21.6	13.7
Chattanooga Metropolitan	Chattanooga, Tenn.	20.6	26.1	26.4
Greenville/Spartanburg	Greenville, S.C.	20.8	23.4	12.5
Jackson Municipal	Jackson, Miss.	19.3	21.7	12.2
Blue Grass	Lexington, Ky.	19.8	22.2	12.1
Monterey Peninsula	Monterey, Calif.	15.5	17.9	15.6
McGhee Tyson Municipal	Knoxville, Tenn.	20.1	23.0	14.3
<b>Large</b>				
Hartsfield-Atlanta	Atlanta, Ga.	19.1	24.3	27.5

<sup>a</sup>Fares are in constant 1988 dollars.

Whether an airport is concentrated—dominated by one or two airlines—and accessible to new competitors are factors that affect fares. In a previous review, we found that fares at 15 concentrated airports were higher than at 38 unconcentrated airports.<sup>9</sup> Of the airports with relatively large increases in fares, those in Atlanta, Augusta, Jackson, and Montgomery also had high levels of concentration (at each of these airports in 1988, two airlines were dominant with at least 80 percent of the enplanements). Moreover, much of the service at airports in the southeastern states where these cities are located is to Atlanta, which had by far the largest fare increase of any large-community airport in our sample. Furthermore, we found in our earlier study that the Atlanta airport had the highest yield of any concentrated airport.

In another study, we found that conditions at airports such as exclusive-use leases, majority-in-interest agreements, and takeoff and landing slots can discourage market entry, reduce competition, and affect

<sup>9</sup>See *Airline Competition: Higher Fares and Reduced Competition at Concentrated Airports* (GAO/RCED-90-102, July 11, 1990).

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fares.<sup>10</sup> For example, most of the gates, ticket counters, and passenger boarding areas at the airports in Atlanta and Chattanooga are controlled by exclusive-use leases. Expansion is also limited at these two airports because of majority-in-interest agreements between the airports and the dominant airlines.

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## Reductions in Fares Per Passenger Mile Varied at Individual Airports

While overall average fares declined over 9 percent between 1979 and 1988 for the airports serving small and medium-sized communities, average fares at some airports fell by as much as 34 percent. For the large-community airports, the average yield was about 5 percent lower in 1988 than in 1979, but again, the declines at individual airports varied widely. We did not analyze specific reasons for these variations, but the amount of competition might be expected to play an important role. Table 3 lists airports where declines were at least 20 percent from 1979 to 1988.

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<sup>10</sup>Some airports enter into lease agreements with airlines that allow the airlines exclusive use of gates, ticket counters, and/or passenger boarding areas. Majority-in-interest agreements give airlines with a majority of airport operations a voice in expansion and other decisions that might affect the airlines' financial commitments. Takeoff and landing slots are authorizations given by the Federal Aviation Administration to conduct flights at specified times. See Airline Competition: Industry Operating and Marketing Practices Limit Market Entry (GAO/RCED-90-147, Aug. 29, 1990).

**Table 3: Airports Where Fares Per Passenger Mile Fell at Least 20 Percent From 1979 to 1988**

Community size and airport	Location	Cents per passenger mile <sup>a</sup>		Percentage decrease
		1979	1988	
<b>Small</b>				
Lubbock International	Lubbock, Tex.	21.1	13.9	34.2
Lafayette Regional	Lafayette, La.	20.4	16.0	21.5
Midland International	Midland, Tex.	21.7	14.2	34.6
<b>Medium</b>				
Albuquerque International	Albuquerque, N.Mex.	19.6	13.6	30.7
Colorado Springs Municipal	Colorado Springs, Colo.	20.7	15.5	24.7
El Paso International	El Paso, Tex.	19.5	14.4	26.2
McCarran International	Las Vegas, Nev.	18.1	13.6	25.2
Tucson International	Tucson, Ariz.	17.2	12.8	25.3
<b>Large</b>				
Sky Harbor International	Phoenix, Ariz.	17.9	11.8	34.3
Kansas City International	Kansas City, Mo.	17.7	13.3	24.9

<sup>a</sup>Fares are in constant 1988 dollars.

Competition from several airlines through their respective hubs is one way to lower fares. Another is through the entrance of a low-cost airline into the market. Airlines with lower costs of operation, such as America West and Southwest, have entered markets primarily in the West and Southwest. America West uses Las Vegas and Phoenix as hubs and has a substantial share of the traffic to Colorado Springs and Tucson. The airline also captures some of the market for travel to the airports in Albuquerque, El Paso, and Midland. These airports have all experienced significant declines in fares per passenger mile.

A similar result has come about at the airports served by Southwest Airlines, whose operations are centered at Dallas Love Field Airport. Southwest provides a significant amount of service to Albuquerque, El Paso, Lubbock, and Midland, as well as some service to Kansas City, Las Vegas, and Phoenix. Again, these airports have all experienced large declines in fares per passenger mile.

## Conclusions

On average, fares adjusted for inflation have declined since deregulation, including those at airports in small and medium-sized communities. Even so, the average yields at these airports are higher—by about 9

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percent—than at the airports in large communities. However, a lower average yield for the large-community airports is to be expected, given that the traffic volume is greater and the trip distance is longer at these airports. Overall, changes in fares are generally consistent with predictions that the removal of fare and route regulation would result in lower fares. The fact that fares fell more at airports serving small and medium-sized communities than at airports serving large communities is more surprising, but may be due to the increased efficiencies in serving the small and medium-sized communities due to the growth of hub-and-spoke systems.

While inflation-adjusted fares have declined overall, not everyone has benefited or benefited to the same degree. Since deregulation, real fares have increased at some airports, and for those that have decreased, the reductions vary widely. While this review did not focus on the specific reasons for these differences at individual airports, factors such as hub-and-spoke systems, the presence of low-cost airlines, and airport concentration are likely to contribute to the differences.

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We discussed the information in this report with DOT officials. They agreed with our findings and conclusions on the changes in fares since deregulation and provided some clarifications, which we incorporated where appropriate. As requested, we did not obtain official agency comments.

Our review was conducted between February 1989 and March 1990 in accordance with generally accepted government auditing standards. Additional details on our scope and methodology are contained in appendix III.

As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to the Secretary of Transportation and other interested parties. If you or your staff have

any questions, I can be reached at (202) 275-1000. Major contributors to this report are listed in appendix IV.



Kenneth M. Mead  
Director, Transportation Issues



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**Abbreviations**

CAB	Civil Aeronautics Board
DOT	Department of Transportation
GAO	General Accounting Office
MSA	metropolitan statistical area
O&D	origin-destination
RCED	Resources, Community, and Economic Development Division

# Small-, Medium-Sized-, and Large-Community Airports' Fares Per Passenger Mile for 1979, 1984, and 1988

Airport name	Location	Cents per passenger mile <sup>a</sup>					
		Estimate			Sampling error of estimate (+ or -) <sup>b</sup>		
		1979	1984	1988	1979	1984	1988
<b>Small-Community Airports</b>							
Amarillo International	Amarillo, Tex.	18.8	19.3	17.5	.12	.14	.13
Outagamie County	Appleton, Wis.	22.2	28.1	23.3	.39	.41	.43
Asheville Regional	Asheville, N.C.	22.4	28.0	21.2	.27	.34	.34
Kalamazoo County	Kalamazoo, Mich.	20.8	24.7	19.6	.17	.34	.26
Edwin A. Link Field	Binghamton, N.Y.	17.4	22.4	15.5	.18	.29	.25
Bangor International	Bangor, Maine	17.1	19.9	17.6	.17	.20	.28
Billings Logan International	Billings, Mont.	18.9	22.1	16.8	.15	.18	.20
Bismarck Municipal	Bismarck, N.Dak.	19.6	21.3	16.2	.28	.20	.23
Boise Air Terminal	Boise, Idaho	16.8	21.2	16.2	.14	.17	.19
Burlington International	Burlington, Vt.	17.5	19.2	13.9	.16	.30	.13
Cedar Rapids Municipal	Cedar Rapids/Iowa City, Iowa	16.8	20.5	16.4	.14	.19	.17
University of Illinois, Willard	Champaign/Urbana, Ill.	21.3	21.5	18.5	.22	.22	.27
Yeager Field	Charleston, W.Va.	20.9	27.3	22.1	.15	.25	.30
Duluth International	Duluth, Minn./Superior, Wis.	19.5	22.0	16.0	.19	.26	.28
Elmira/Corning Regional	Elmira/Corning, N.Y.	19.2	24.7	19.0	.25	.31	.41
Erie International	Erie, Pa.	19.6	26.6	18.4	.16	.34	.32
Mahlon Sweet Field	Eugene, Oreg.	16.4	17.3	13.3	.32	.17	.20
Evansville Regional	Evansville, Ind.	20.4	29.3	19.8	.13	.42	.29
Hector International	Fargo, N.D./Moorhead, Minn.	18.5	21.6	16.1	.16	.18	.19
Fayetteville Municipal	Fayetteville, N.C.	20.4	20.9	18.7	.22	.24	.27
Joe Foss Field	Sioux Falls, S.Dak.	18.5	19.6	16.6	.15	.15	.19
Walker Field	Grand Junction, Colo.	20.5	22.5	17.9	.36	.31	.30
Gainesville Regional	Gainesville, Fla.	18.8	25.4	18.6	.16	.29	.28
Austin Straubel Field	Green Bay/Clintonville, Wis.	18.3	22.9	17.0	.21	.20	.24
Great Falls International	Great Falls, Mont.	17.4	19.4	14.3	.20	.23	.24
Rio Grande Valley International	Harlingen, Tex.	17.0	15.4	16.6	.77	.19	.14
Huntsville-Madison County	Huntsville/Decatur, Ala.	19.9	28.8	23.8	.19	.17	.23
New Hanover County	Wilmington, N.C.	23.9	22.9	20.2	.37	.36	.38
Lubbock International	Lubbock, Tex.	21.1	19.5	13.9	.21	.39	.12
Lafayette Regional	Lafayette, La.	20.4	20.1	16.0	.24	.29	.29
Lincoln Municipal	Lincoln, Nebr.	16.8	19.3	15.0	.18	.24	.16
Midland International	Midland, Tex.	21.7	17.5	14.2	.27	.28	.12
Manchester	Manchester, N.H.	19.6	25.3	16.8	.34	.70	.25
Missoula International	Missoula, Mont.	18.6	19.7	14.8	.31	.25	.26
Dannelly Field	Montgomery, Ala.	19.3	28.5	24.3	.12	.23	.33

(continued)

**Appendix I  
Small-, Medium-Sized-, and Large-Community  
Airports' Fares Per Passenger Mile for 1979,  
1984, and 1988**

Airport name	Location	Cents per passenger mile <sup>a</sup>					
		Estimate			Sampling error of estimate (+ or -) <sup>b</sup>		
		1979	1984	1988	1979	1984	1988
<b>Small-Community Airports (continued)</b>							
Myrtle Beach Air Force Base	Myrtle Beach, S.C.	23.0	26.4	22.1	.50	.44	.49
Tri-Cities	Pasco/Kennewick, Wash.	19.7	20.8	17.9	.24	.27	.36
Portland International Jetport	Portland, Maine	16.9	20.0	14.9	.13	.30	.12
Rapid City Regional	Rapid City, S.Dak.	20.0	22.9	17.9	.21	.24	.25
Reno Cannon International	Reno, Nev.	15.7	18.8	15.9	.14	.09	.12
Roanoke Regional	Roanoke, Va.	21.2	25.6	20.0	.23	.25	.28
Rochester Municipal	Rochester, Minn.	18.1	22.6	16.1	.21	.33	.28
Southwest Florida Regional	Ft. Myers, Fla.	16.1	20.9	13.0	.12	.19	.09
Savannah International	Savannah, Ga.	19.1	25.8	20.3	.14	.19	.24
Michiana Regional	South Bend, Ind.	17.6	22.9	16.8	.16	.20	.18
Springfield Regional	Springfield, Mo.	18.7	20.3	16.6	.20	.19	.22
Sarasota-Brandenton	Sarasota/Brandenton, Fla.	16.6	21.2	13.9	.12	.19	.11
Sioux Gateway	Sioux City, Iowa	18.3	19.3	14.6	.29	.57	.23
Tallahassee Municipal	Tallahassee, Fla.	21.6	29.5	22.6	.12	.21	.24
Overall		18.5	21.9	16.8	.03	.04	.03
<b>Medium-Sized-Community Airports</b>							
Albuquerque International	Albuquerque, N.Mex.	19.6	15.2	13.6	.09	.05	.05
Bush Field	Augusta, Ga.	18.9	26.8	24.1	.15	.21	.35
Meadows Field	Bakersfield, Calif.	16.8	19.7	16.4	.29	.49	.34
Baton Rouge Metropolitan	Baton Rouge, La.	19.5	22.6	18.9	.11	.15	.18
Columbia Metropolitan	Columbia, S.C.	19.0	27.5	21.6	.11	.16	.21
Chattanooga Metropolitan	Chattanooga, Tenn.	20.6	29.8	26.1	.12	.22	.33
Charleston International	Charleston, S.C.	18.9	26.4	19.9	.11	.16	.20
Colorado Springs Municipal	Colorado Springs, Colo.	20.7	15.5	15.5	.21	.10	.10
Corpus Christi International	Corpus Christi, Tex.	18.9	17.5	17.1	.12	.12	.15
Daytona Beach Regional	Daytona Beach, Fla.	17.0	22.5	15.1	.15	.30	.17
Des Moines International	Des Moines, Iowa	16.8	19.5	16.1	.10	.08	.11
El Paso International	El Paso, Tex.	19.5	16.0	14.4	.14	.10	.06
Fresno Air Terminal	Fresno, Calif.	15.8	18.7	16.7	.15	.17	.19
Bishop International	Flint, Mich.	17.0	18.8	14.2	.21	.30	.23
Ft. Wayne Municipal/Baer	Ft. Wayne, Ind.	17.6	24.0	19.1	.11	.18	.23
Spokane International	Spokane, Wash.	15.6	17.9	13.7	.11	.12	.12
Greenville/Spartanberg	Greenville/Spartanberg, S.C.	20.8	28.9	23.4	.12	.18	.22
Wichita Mid-Continent	Wichita, Kans.	19.3	20.6	16.4	.14	.10	.12
Jackson Municipal	Jackson/Vicksburg, Miss.	19.3	26.2	21.7	.09	.14	.21
Capital City	Lansing, Mich.	17.2	21.8	15.4	.14	.23	.20

(continued)

**Appendix I  
Small, Medium-Sized, and Large-Community  
Airports' Fares Per Passenger Mile for 1979,  
1984, and 1988**

Airport name	Location	Cents per passenger mile <sup>a</sup>					
		Estimate			Sampling error of estimate (+ or -) <sup>b</sup>		
		1979	1984	1988	1979	1984	1988
<b>Medium-Sized-Community Airports (continued)</b>							
McCarran International	Las Vegas, Nev.	18.1	17.1	13.6	.08	.05	.05
Blue Grass	Lexington/Frankfort, Ky.	19.8	27.9	22.2	.11	.17	.24
Little Rock Regional	Little Rock, Ark.	20.4	26.0	20.7	.09	.12	.13
Tri-City	Saginaw/Bay City/Midland, Mich.	16.4	25.1	17.9	.13	.22	.27
Harrisburg International	Harrisburg, Pa.	17.9	22.8	17.5	.10	.19	.18
McAllen-Miller International	McAllen/Mission/Edinburg, Tex.	18.1	15.3	14.6	.37	.19	.18
Melbourne Regional	Melbourne, Fla.	17.0	21.9	15.4	.15	.25	.18
Quad-City	Moline, Ill./Davenport, Iowa	16.8	21.0	16.6	.10	.17	.19
Mobile Municipal	Mobile, Ala./Pascogoula, Miss.	19.2	26.1	19.0	.13	.20	.22
Monterey Peninsula	Monterey, Calif.	15.5	20.8	17.9	.22	.21	.34
Dane County Regional	Madison, Wis.	17.6	20.4	16.8	.12	.11	.15
Greater Peoria	Peoria, Ill.	19.2	22.0	17.6	.16	.16	.22
Pensacola Regional	Pensacola, Fla.	18.7	25.0	18.9	.13	.20	.20
Santa Barbara Municipal	Santa Barbara, Calif.	15.5	18.9	14.9	.25	.23	.20
Shreveport Regional	Shreveport, La.	19.0	26.9	19.8	.10	.17	.20
Tri-City Regional	Bristol/Kingsport/Johnson City, Tenn.	21.8	28.0	23.9	.22	.31	.38
Tucson International	Tucson, Ariz.	17.2	16.9	12.8	.09	.07	.07
McGhee Tyson Municipal	Knoxville, Tenn.	20.1	29.2	23.0	.10	.22	.22
Overall		18.5	20.6	16.7	.02	.02	.02
<b>Large-Community Airports</b>							
Hartsfield Atlanta International	Atlanta, Ga.	19.1	27.9	24.3	.03	.04	.06
Logan International	Boston, Mass.	15.7	17.2	15.1	.03	.03	.03
Hopkins International	Cleveland, Ohio	16.1	21.2	16.0	.04	.05	.06
Washington National	Washington, D.C.	19.5	21.0	18.8	.06	.04	.05
Stapleton International	Denver, Colo.	17.0	15.9	17.2	.04	.03	.04
Dallas/Ft. Worth International	Dallas, Tex.	18.3	20.1	19.7	.03	.04	.04
Detroit Metropolitan/Wayne County	Detroit/Ann Arbor, Mich.	16.2	18.8	14.6	.03	.06	.04
Newark International	Newark, N.J.	16.5	16.1	14.9	.05	.03	.03
William P. Hobby	Houston, Tex.	17.9	15.5	15.8	.41	.34	.06
Houston Intercontinental	Houston, Tex.	17.9	16.2	17.6	.04	.04	.05
John F. Kennedy International	New York, N.Y.	12.6	14.4	11.5	.04	.05	.04
Los Angeles International	Los Angeles, Calif.	14.0	14.6	12.1	.03	.04	.02
LaGuardia International	New York, N.Y.	18.3	19.0	17.6	.05	.03	.04
Kansas City International	Kansas City, Kans.	17.7	17.3	13.3	.04	.04	.04
Miami International	Miami, Fla.	14.5	16.1	13.0	.04	.04	.04

(continued)

**Appendix I  
Small, Medium-Sized, and Large-Community  
Airports' Fares Per Passenger Mile for 1979,  
1984, and 1988**

Airport name	Location	Cents per passenger mile <sup>a</sup>					
		Estimate			Sampling error of estimate (+ or -) <sup>b</sup>		
		1979	1984	1988	1979	1984	1988
<b>Large-Community Airports (continued)</b>							
Minneapolis/St. Paul International	Minneapolis, Minn.	17.1	19.5	17.1	.04	.04	.05
Chicago-O'Hare International	Chicago, Ill.	16.8	21.6	18.3	.03	.03	.04
Philadelphia International	Philadelphia, Pa.	16.2	19.1	16.8	.03	.04	.05
Sky Harbor International	Phoenix, Ariz.	17.9	14.8	11.8	.05	.04	.03
Greater Pittsburgh International	Pittsburgh, Pa.	17.1	22.9	17.7	.03	.05	.07
San Diego International-Lindberg Field	San Diego, Calif.	15.0	14.5	12.0	.08	.04	.03
Seattle-Tacoma International	Seattle, Wash.	14.7	15.1	12.0	.05	.04	.04
San Francisco International	San Francisco, Calif.	13.7	15.1	12.7	.04	.03	.03
Lambert-St. Louis International	St. Louis, Mo.	18.3	22.3	18.8	.04	.06	.06
Tampa International	Tampa, Fla.	16.0	18.3	15.3	.05	.06	.05
<b>Overall</b>		<b>16.3</b>	<b>17.8</b>	<b>15.4</b>	<b>.01</b>	<b>.01</b>	<b>.01</b>

<sup>a</sup>Fares are in constant 1988 dollars.

<sup>b</sup>The estimate of fare per passenger mile developed from the statistical sample of tickets purchased has a measurable precision, or sampling error. The sampling error is the maximum amount by which the estimate obtained from the sample can be expected to differ from the actual fare per passenger mile calculated by examining the entire universe of tickets. Each sampling error was calculated at the 95-percent confidence level. This means the chances are 19 out of 20 that if we reviewed all tickets purchased, the results would differ from the estimate obtained from our sample by less than the sampling error of such estimate.

# Changes in Fares Per Passenger Mile at Small-, Medium-Sized-, and Large-Community Airports

Airport name	Location	Percentage change in fare per passenger mile					
		Estimate			Sampling error of estimate (+ or -) <sup>a</sup>		
		1979-1984	1984-1988	1979-1988	1979-1984	1984-1988	1979-1988
<b>Small-Community Airports</b>							
Amarillo International	Amarillo, Tex.	2.6	-9.0	-6.6	0.98	1.16	1.16
Outagamie County	Appleton, Wis.	26.6	-17.2	4.8	2.92	1.58	2.27
Asheville Regional	Asheville, N.C.	25.0	-24.3	-5.3	2.16	1.32	1.65
Kalamazoo County	Kalamazoo, Mich.	18.8	-20.8	-5.9	1.91	1.36	1.24
Edwin A. Link Field	Binghamton, N.Y.	28.7	-30.9	-11.1	2.16	1.32	1.55
Bangor International	Bangor, Maine	16.6	-11.9	2.8	1.63	1.37	1.56
Billings Logan International	Billings, Mont.	17.2	-24.1	-11.0	1.30	0.95	1.11
Bismarck Municipal	Bismarck, N.Dak.	9.0	-24.1	-17.3	1.86	1.12	1.50
Boise Air Terminal	Boise, Idaho	26.3	-23.5	-3.3	1.47	0.93	1.18
Burlington International	Burlington, Vt.	10.0	-27.8	-20.7	1.99	1.26	0.98
Cedar Rapids Municipal	Cedar Rapids/Iowa City, Iowa	22.4	-20.2	-2.2	1.51	0.95	1.12
University of Illinois, Willard	Champaign/Urbana, Ill.	1.1 <sup>b</sup>	-13.9	-13.0	1.48	1.35	1.38
Yeager Field	Charleston, W.Va.	30.4	-18.9	5.8	1.51	1.09	1.30
Duluth International	Duluth, Minn./Superior, Wis.	12.8	-27.6	-18.3	1.74	1.29	1.33
Elmira/Corning Regional	Elmira/Corning, N.Y.	28.6	-23.2	-1.3 <sup>b</sup>	2.32	1.51	1.97
Erie International	Erie, Pa.	35.8	-30.6	-5.7	2.06	1.25	1.43
Mahlon Sweet Field	Eugene, Oreg.	5.3	-23.1	-19.0	2.27	1.10	1.78
Evansville Regional	Evansville, Ind.	43.5	-32.4	-3.0	2.25	1.25	1.28
Hector International	Fargo, N.D./Moorhead, Minn.	16.8	-25.2	-12.6	1.40	0.92	1.09
Fayetteville Municipal	Fayetteville, N.C.	2.6	-10.8	-8.5	1.59	1.45	1.45
Joe Foss Field	Sioux Falls, S.Dak.	6.1	-15.5	-10.3	1.17	0.94	1.04
Walker Field	Grand Junction, Colo.	9.7	-20.3	-12.6	2.44	1.57	1.94
Gainesville Regional	Gainesville, Fla.	34.9	-26.9	-1.4 <sup>b</sup>	1.93	1.25	1.49
Austin Straubel Field	Green Bay/Clintonville, Wis.	25.0	-25.6	-6.9	1.80	0.97	1.41
Great Falls International	Great Falls, Mont.	11.0	-26.3	-18.2	1.84	1.34	1.49
Rio Grande Valley International	Harlingen, Tex.	-9.7	7.9	-2.5 <sup>b</sup>	4.25	1.83	4.58
Huntsville-Madison County	Huntsville/Decatur, Ala.	44.2	-17.2	19.3	1.61	0.86	1.53
New Hanover County	Wilmington, N.C.	-4.0	-11.9	-15.5	2.13	1.93	1.83
Lubbock International	Lubbock, Tex.	-7.6	-28.8	-34.2	2.06	1.58	0.93
Lafayette Regional	Lafayette, La.	-1.7 <sup>b</sup>	-20.1	-21.5	1.81	1.60	1.44
Lincoln Municipal	Lincoln, Nebr.	14.6	-22.3	-10.9	1.87	1.15	1.22
Midland International	Midland, Tex.	-19.5	-18.7	-34.6	1.62	1.50	1.02
Manchester	Manchester, N.H.	29.5	-33.9	-14.4	4.23	1.98	1.81
Missoula International	Missoula, Mont.	5.6	-24.8	-20.5	2.23	1.42	1.73
Dannelly Field	Montgomery, Ala.	47.6	-14.7	25.9	1.51	1.16	1.59

(continued)

**Appendix II  
Changes in Fares Per Passenger Mile at  
Small, Medium-Sized, and Large-  
Community Airports**

Airport name	Location	Percentage change in fare per passenger mile					
		Estimate			Sampling error of estimate (+ or -) <sup>a</sup>		
		1979-1984	1984-1988	1979-1988	1979-1984	1984-1988	1979-1988
<b>Small-Community Airports (continued)</b>							
Myrtle Beach Air Force Base	Myrtle Beach, S.C.	15.1	-16.4	-3.8	3.16	2.04	2.70
Tri-Cities	Pasco/Kennewick, Wash.	5.8	-14.1	-9.2	1.88	2.04	2.12
Portland International Jetport	Portland, Maine	18.2	-25.2	-11.6	1.99	1.22	0.85
Rapid City Regional	Rapid City, S.Dak.	14.7	-22.0	-10.5	1.70	1.18	1.35
Reno Cannon International	Reno, Nev.	19.9	-15.8	1.0 <sup>b</sup>	1.23	0.73	1.15
Roanoke Regional	Roanoke, Va.	20.7	-21.6	-5.4	1.78	1.10	1.41
Rochester Municipal	Rochester, Minn.	25.1	-28.8	-10.9	2.34	1.53	1.73
Southwest Florida Regional	Ft. Myers, Fla.	29.6	-37.9	-19.5	1.52	0.69	0.77
Savannah International	Savannah, Ga.	35.2	-21.1	6.7	1.41	0.91	1.22
Michiana Regional	South Bend, Ind.	30.4	-26.7	-4.4	1.61	0.89	1.18
Springfield Regional	Springfield, Mo.	8.6	-18.3	-11.3	1.53	1.14	1.30
Sarasota-Brandenton	Sarasota/Brandenton, Fla.	28.0	-34.5	-16.2	1.48	0.74	0.85
Sioux Gateway	Sioux City, Iowa	5.4	-24.4	-20.3	3.54	2.42	1.59
Tallahassee Municipal	Tallahassee, Fla.	36.7	-23.5	4.6	1.26	0.83	1.03
Overall		18.3	-23.4	-9.3	0.30	0.19	0.21
<b>Medium-Sized-Community Airports</b>							
Albuquerque International	Albuquerque, N.Mex.	-22.3	-10.8	-30.7	0.43	0.53	0.46
Bush Field	Augusta, Ga.	41.8	-10.2	27.3	1.58	1.17	1.66
Meadows Field	Bakersfield, Calif.	17.0	-16.7	-2.5	3.56	2.53	2.41
Baton Rouge Metropolitan	Baton Rouge, La.	16.1	-16.4	-2.9	1.03	0.86	0.95
Columbia Metropolitan	Columbia, S.C.	44.4	-21.3	13.7	1.20	0.72	1.02
Chattanooga Metropolitan	Chattanooga, Tenn.	44.6	-12.6	26.4	1.35	1.00	1.33
Charleston International	Charleston, S.C.	39.9	-24.5	5.6	1.20	0.75	1.04
Colorado Springs Municipal	Colorado Springs, Colo.	-24.9	0.3 <sup>b</sup>	-24.7	0.92	0.89	0.89
Corpus Christi International	Corpus Christi, Tex.	-7.3	-2.8	-9.9	0.87	1.23	1.11
Daytona Beach Regional	Daytona Beach, Fla.	32.4	-32.9	-11.2	2.11	1.10	1.15
Des Moines International	Des Moines, Iowa	16.3	-17.6	-4.2	0.81	0.53	0.73
El Paso International	El Paso, Tex.	-17.9	-10.1	-26.2	0.79	0.78	0.68
Fresno Air Terminal	Fresno, Calif.	18.3	-10.6	5.8	1.56	1.14	1.38
Bishop International	Flint, Mich.	10.8	-24.5	-16.3	2.22	1.51	1.43
Ft. Wayne Municipal/Baer	Ft. Wayne, Ind.	36.6	-20.6	8.5	1.31	0.91	1.18
Spokane International	Spokane, Wash.	14.6	-23.7	-12.5	1.13	0.75	0.90
Greenville/Spartanberg	Greenville/Spartanberg, S.C.	39.0	-19.1	12.5	1.20	0.78	1.06
Wichita Mid-Continent	Wichita, Kans.	7.1	-20.4	-14.7	0.94	0.60	0.81
Jackson Municipal	Jackson/Vicksburg, Miss.	35.7	-17.3	12.2	0.99	0.75	0.98

(continued)

**Appendix II  
Changes in Fares Per Passenger Mile at  
Small-, Medium-Sized-, and Large-  
Community Airports**

Airport name	Location	Percentage change in fare per passenger mile					
		Estimate			Sampling error of estimate (+ or -) <sup>a</sup>		
		1979-1984	1984-1988	1979-1988	1979-1984	1984-1988	1979-1988
<b>Medium-Sized-Community Airports (continued)</b>							
Capital City	Lansing, Mich.	26.9	-29.3	-10.3	1.69	0.99	1.11
McCarran International	Las Vegas, Nev.	-5.7	-20.7	-25.2	0.53	0.39	0.45
Blue Grass	Lexington/Frankfort, Ky.	40.8	-20.4	12.1	1.18	0.75	1.04
Little Rock Regional	Little Rock, Ark.	27.2	-20.3	1.4	0.79	0.70	0.87
Tri-City	Saginaw/Bay City/Midland, Mich.	53.3	-28.8	9.2	1.79	0.95	1.39
Harrisburg International	Harrisburg, Pa.	27.2	-23.2	-2.4	1.31	0.84	0.89
McAllen-Miller International	McAllen/Mission/Edinburg, Tex.	-15.1	-5.1	-19.4	2.03	1.88	2.06
Melbourne Regional	Melbourne, Fla.	28.2	-29.4	-9.5	1.84	1.12	1.29
Quad-City	Moline, Ill./Davenport, Iowa	25.3	-21.1	-1.1	1.26	0.88	0.99
Mobile Municipal	Mobile, Ala./Pascogoula, Miss.	36.1	-27.2	-1.0 <sup>b</sup>	1.36	0.81	1.05
Monterey Peninsula	Monterey, Calif.	34.2	-13.8	15.6	2.34	1.73	2.58
Dane County Regional	Madison, Wis.	16.0	-17.5	-4.4	0.99	0.71	0.89
Greater Peoria	Peoria, Ill.	14.5	-20.0	-8.4	1.28	0.97	1.16
Pensacola Regional	Pensacola, Fla.	33.6	-24.4	1.0 <sup>b</sup>	1.44	0.86	1.07
Santa Barbara Municipal	Santa Barbara, Calif.	22.5	-21.2	-3.4	2.47	1.35	1.97
Shreveport Regional	Shreveport, La.	42.1	-26.7	4.2	1.16	0.82	1.11
Tri-City Regional	Bristol/Kingsport/Johnson City, Tenn.	28.3	-14.7	9.4	1.93	1.36	1.66
Tucson International	Tucson, Ariz.	-1.6	-24.1	-25.3	0.67	0.54	0.57
McGhee Tyson Municipal	Knoxville, Tenn.	44.9	-21.1	14.3	1.31	0.80	0.99
Overall		11.5	-19.0	-9.6	0.19	0.14	0.17
<b>Large-Community Airports</b>							
Hartsfield Atlanta International	Atlanta, Ga.	46.4	-12.9	27.5	0.34	0.22	0.33
Logan International	Boston, Mass.	9.0	-12.1	-4.2	0.28	0.26	0.26
Hopkins International	Cleveland, Ohio	31.2	-24.3	-0.7	0.45	0.29	0.36
Washington National	Washington, D.C.	7.3	-10.3	-3.8	0.39	0.29	0.37
Stapleton International	Denver, Colo.	-6.3	8.0	1.2	0.28	0.32	0.33
Dallas/Ft. Worth International	Dallas, Tex.	10.0	-2.3	7.4	0.27	0.29	0.31
Detroit Metropolitan/Wayne County	Detroit/Ann Arbor, Mich.	16.0	-22.7	-10.3	0.44	0.30	0.24
Newark International	Newark, N.J.	-2.5	-7.4	-9.7	0.34	0.25	0.31
William P. Hobby	Houston, Tex.	-13.3	1.8 <sup>b</sup>	-11.7	2.74	2.30	2.08
Houston Intercontinental	Houston, Tex.	-9.4	9.1	-1.2	0.27	0.45	0.40
John F. Kennedy International	New York, N.Y.	14.6	-20.1	-8.4	0.54	0.42	0.50
Los Angeles International	Los Angeles, Calif.	4.3	-16.7	-13.1	0.38	0.29	0.28
LaGuardia International	New York, N.Y.	4.0	-7.2	-3.6	0.31	0.24	0.31
Kansas City International	Kansas City, Kans.	-2.2	-23.3	-24.9	0.34	0.30	0.29

(continued)

**Appendix II  
Changes in Fares Per Passenger Mile at  
Small-, Medium-Sized-, and Large-  
Community Airports**

Airport name	Location	Percentage change in fare per passenger mile					
		Estimate			Sampling error of estimate (+ or -) <sup>a</sup>		
		1979-1984	1984-1988	1979-1988	1979-1984	1984-1988	1979-1988
<b>Large-Community Airports (continued)</b>							
Miami International	Miami, Fla.	10.8	-19.2	-10.5	0.40	0.32	0.35
Minneapolis/St. Paul International	Minneapolis/St. Paul, Minn.	13.7	-12.1	-0.1 <sup>b</sup>	0.34	0.26	0.30
Chicago-O'Hare International	Chicago, Ill.	29.0	-15.4	9.2	0.28	0.19	0.28
Philadelphia International	Philadelphia, Pa.	17.4	-11.9	3.5	0.31	0.26	0.30
Sky Harbor International	Phoenix, Ariz.	-17.1	-20.8	-34.3	0.29	0.31	0.26
Greater Pittsburgh International	Pittsburgh, Pa.	34.1	-22.4	4.0	0.40	0.27	0.34
San Diego International-Lindberg Field	San Diego, Calif.	-3.4	-17.3	-20.0	0.59	0.38	0.52
Seattle-Tacoma International	Seattle, Wash.	3.0	-20.6	-18.3	0.42	0.33	0.36
San Francisco International	San Francisco, Calif.	9.8	-16.2	-7.9	0.41	0.29	0.38
Lambert-St. Louis International	St. Louis, Mo.	21.8	-15.7	2.8	0.40	0.33	0.38
Tampa International	Tampa, Fla.	14.1	-16.5	-4.7	0.53	0.37	0.43
Overall		9.5	-13.3	-5.0	0.09	0.07	0.08

<sup>a</sup>A sampling error at the 95-percent confidence level has been calculated for the changes in fares between time periods. It is the maximum amount by which the estimate of the change in fares obtained from the sample can be expected to differ from the actual change in fares calculated by examining the entire universe of tickets.

<sup>b</sup>The sampling error at the 95-percent confidence level for this estimated change is large enough, relative to the estimated change, that the change may actually be 0 or in the opposite direction from the direction shown by the estimate.

# Objectives, Scope, and Methodology

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In response to requests from the Chairman, Senate Committee on Commerce, Science, and Transportation, and from a Member of the Committee, Senator Richard H. Bryan, we examined airfare changes since deregulation for airports serving small, medium-sized, and large communities. Specifically, we examined the trends in the average yields—fares per passenger mile—between 1979, 1984, and 1988 for travel out of 49 airports serving small communities, 38 airports serving medium-sized communities, and 25 airports serving large communities.

We used the Department of Transportation's (DOT) "Passenger Origin-Destination Survey" ("O&D Survey"). DOT requires airlines to report data on a quarterly basis from a 10-percent sample of all tickets sold. For each calendar year, the "O&D Survey" provides, among other things, information on airfares paid, the number of passengers for each airport, the specific routes traveled by passengers, and the distance between the origin and destination airports.

The 1979 "O&D Survey" provided the first full year of data on fares paid. We assessed the availability of fare information for years prior to 1979 (i.e., prior to deregulation) and found that data on fares paid were not readily available nor could they be reconstructed to be consistent and comparable with the fare data provided by the "O&D Survey." Therefore, we used the 1979 fare data as the earliest available fare data since deregulation. We also examined the 1984 fare data as representative of increased competition in the airline industry and the 1988 fare data as the most current data available at the time of our review.

We selected the sample of 49 small-community airports, 38 medium-sized-community airports, and 25 large-community airports using the following criteria:

- Small communities were those with populations in a metropolitan statistical area (MSA) of 300,000 or less, medium-sized communities were in MSAs of 300,001 to 600,000, and large communities were in MSAs of 1.5 million or more.<sup>1</sup> We used 1984 U.S. Census data to provide community size information midway between the years reviewed for each airport location. Our review focused on yields at airports serving small and medium-sized communities, but for comparison, we also examined yields

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<sup>1</sup>The 49 small communities in our sample had populations ranging from 71,000 to over 299,000.

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at large-community airports.<sup>2</sup> The sample of large-community airports also represented the largest airports according to the volume of traffic.

- All of the airports in our study were among the largest 175 in the nation, based on the number of originating passengers. This criterion was necessary because as an airport's rank falls, the number of tickets from that airport in the "O&D Survey" declines. A smaller number of tickets per route increases the potential for sampling error and may result in calculations that are not representative of the airport's overall traffic.
- All of the airports in our study were located within the 48 contiguous states because airports outside the contiguous states are often special cases. Travel from airports located in Alaska, Hawaii, Puerto Rico, and the Virgin Islands is often for very short distances (between islands) and very long distances (between Alaska or Hawaii and the contiguous states) or may take the place of ground transportation (between cities in Alaska).

To provide consistent, comparable information, we identified and used the same routes (origin and destination airport combinations) for each airport for all 3 years. Because the number of passengers traveling on the various routes can change over time, examining fares at two different times could reflect differences in the number of travelers going to various destinations rather than fare changes. Therefore, to take this into account, we held the distribution of passengers between routes constant at the 1988 level for both 1979 and 1984. We also identified the composition of round-trip and one-way traffic on these routes in 1988 and compared it with that occurring in both 1979 and 1984. For our analysis, we included the routes that had the same traffic composition (round-trip, one-way, or both) in all 3 years. To provide consistent and valid data, we used a fare screen to eliminate inaccurate fare data from the "O&D Survey." The fare screen, based on fare information from the Official Airline Guide, eliminated records from the "O&D Survey" data with yields outside of allowable minimum and maximum yields.

Because we analyzed data that were drawn from a statistical sample of tickets purchased, each estimate developed from the sample has a measurable precision, or sampling error. The sampling error is the maximum amount by which the estimate obtained from a statistical sample can be expected to differ from the true universe value. Sampling errors are usually stated at a certain confidence level—in this case, at a 95-percent level. This means the chances are 19 out of 20 that if we reviewed all

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<sup>2</sup>Since our review focused on small and medium-sized communities, we did not review airports serving MSAs of between 600,000 and 1.5 million people.

tickets purchased, the results would differ from the estimates obtained from our sample by less than the sampling errors of such estimates.

To analyze trends in airfares, we compared average yields at airports serving the different community sizes. We used regression analysis to discover if changes in average yields can be explained, in part, by changes in average distance and/or traffic density. This analysis indicated that a negative correlation did exist—as distance and density increased, yields tended to decrease. We also adjusted the 1979 and 1984 yields for inflation, using the consumer price index, so that the yields for all 3 years reflect 1988 dollar values.

We compared our findings on yields with those reported in DOT's February 1990 report on the airline industry, Secretary's Task Force on Competition in the U.S. Domestic Airline Industry. For its study, DOT classified airports and the communities they served according to the percentage of passengers enplaned. The percentage of passengers included in the DOT airport categories of small, medium, and large corresponds to the percentage of passengers included in our review of airports serving small, medium-sized, and large communities. We also reviewed and incorporated information from other studies, including previous GAO reports and testimonies that address issues and factors affecting airfares and yields.

As requested, we did not obtain official agency comments on this report. However, we discussed the information in this report with DOT officials. They agreed with our findings and conclusions on changes in fares since deregulation and provided some clarifications, which we incorporated where appropriate.

Our review was conducted between February 1989 and March 1990 in accordance with generally accepted government auditing standards.

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# Major Contributors to This Report

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**Resources,  
Community, and  
Economic  
Development Division,  
Washington, D.C.**

John W. Hill, Jr., Associate Director  
Francis P. Mulvey, Assistant Director  
Nancy E. Oquist, Evaluator-in-Charge  
Larkin K. Jennings, Staff Evaluator  
Kim Coffman, Senior Evaluator  
Thomas Noone, Senior Systems Analyst  
Sara-Ann W. Moessbauer, Staff Operations Research Analyst  
Earl P. Williams, Jr., Writer-Editor



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